

M.Tech. Civil - III self Study - I

ZAIRE - III (2015 COURSE) (CBCS): WINTER - 2016
SUBJECT : SELF-STUDY PAPER - I: WATER RESOURCES PLANNING &
MANAGEMENT

Day : Monday
Date : 19/12/2016

Time : 11.00 AM TO 02.00 PM
Max. Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer books.

SECTION - I

- Q.1 a) Describe in brief availability of ground water resources in India. [05]
b) Explain method of assessment of surface water resources of ungauged catchments. [05]

OR

- Q.1 a) Discuss the statement "water would be limiting factor in the future economic growth of the country". [05]
b) Describe future irrigation potential of India. [05]

- Q.2 Describe in detail investigations required to be carried out for planning water resources projects. [10]

OR

- Q.2 Describe the procedure of cost benefit analysis of water resources project. [10]
Q.3 Discuss important provision of recent National Water Policy of India. [10]

OR

- Q.3 Discuss merits and demerits of conjunctive use of irrigation water. State the constraints in conjunctive use of irrigation water. [10]

SECTION - II

- Q.4 Explain in detail means and limitations of augmentation of ground water resources. [10]

OR

- Q.4 Explain in detail any two methods of artificial recharge of ground water. [10]
Q.5 Explain following terms with respect to quality of irrigation water: [10]
a) Electrical conductivity b) ESR c) SAR

OR

- Q.5 Describe in detail process of Environmental Impact Assessment of water resources projects. [10]

- Q.6 Discuss the factors responsible for formation of saline soils and explain any one method of reclamation of such soils. [10]

OR

- Q.6 With the help of neat sketch, explain various layouts of closed drains and state the conditions where each type is used. [10]

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ZAIRE III (2015 COURSE) (CBCS) : WINTER - 2016
**SUBJECT : SELF STUDY- I : OPERATION & MAINTENANCE OF HYDRAULIC
STRUCTURE**

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SECTION – I

Q.1 What is the major classification of Hydraulic structures? Explain the need for operation and maintenance of the dam. **(10)**

OR

Describe how the operational activities related to the spillway are significant in case of the safety of the earthen dam.

Q.2 What are the causes of failure and safety requirement of the concrete dam? Elaborate design criteria for earthquake forces acting on the concrete dam. **(10)**

OR

Explain how the quality of construction techniques and use of equipment affect the safety of earthen dam.

Q.3 If you are the experienced engineer, what are the guidelines you can suggest for maintenance of earthen dam during field inspection? **(10)**

OR

Brief the role of maintenance of earthen dam during field inspection.

SECTION – II

Q.4 What are general principles for the selection and positioning of adequate number of equipments to monitor the response of the embankment dam? **(10)**

OR

Enlist the parts of concrete dam structures which require the periodic inspection. Give an example to justify your argument.

Q.5 Explain the probable measure to be taken for safety of earth or concrete dam if adequate operation of spillway gates are not carried out during probable high floods. **(10)**

OR

What would be the periodic inspection tests/observations for the appurtenance works such as spillway, energy dissipation etc.

Q.6 Draw neat sketches of position and location of various instruments/equipments required for monitoring the performance for any typical dam structure. **(10)**

OR

Which instruments and its location you will choose to be placed for the monitoring distribution of stress and strains in concrete dam.

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ZAIRE – III (CBCS - 2015 COURSE): WINTER - 2016
SUBJECT: SELF – STUDY PAPER – I: j) DISASTER MANAGEMENT

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SECTION-I

Q.1 Enlist and explain the various causes for disasters due to manmade activities. (10)

OR

What do you understand by Disaster Management? What are the principles of disaster management? (10)

Q.2 What are the methods to assess the extreme value conditions due to the storm? (10)

OR

What are the methods to assess the extreme value conditions in case of floods? (10)

Q.3 Explain the damages to the property and human life in case of severe earthquakes? Justify your answer with the help of a case study. (10)

OR

How does disaster management help in case of failure of hydraulic structures? Explain with the help of a suitable example. (10)

SECTION-II

Q.4 What are the measures to avoid manmade disasters? (10)

OR

How can the damages due to fire disasters be minimized? Explain with the case of any recent fire disaster. (10)

Q.5 What is remote sensing? How does it help in giving warning in a pre-disaster period? (10)

OR

Explain the use of different warning systems during a likely attack of Tsunamis within a few days. (10)

Q.6 What are various rescue operations? How and which transportation systems are useful in floods caused in northern hilly areas? (10)

OR

How is disaster management operated during cyclones? Elaborate your answer with the case study of a cyclone on the east coast of India. (10)

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